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ABSTRACT

This document provides guidelines for the preparation of careers in aerospace, whether with the National Aeronautics and Space Administration (NASA) or private industry. The document discusses the following topics: (1) Preparing for an Aerospace Career; (2) Careers in Aerospace; (3) Employment Requirements; and (4) How To Apply. (ZWH)

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NASA
National Aeronautics and Space Administration

Information Summaries

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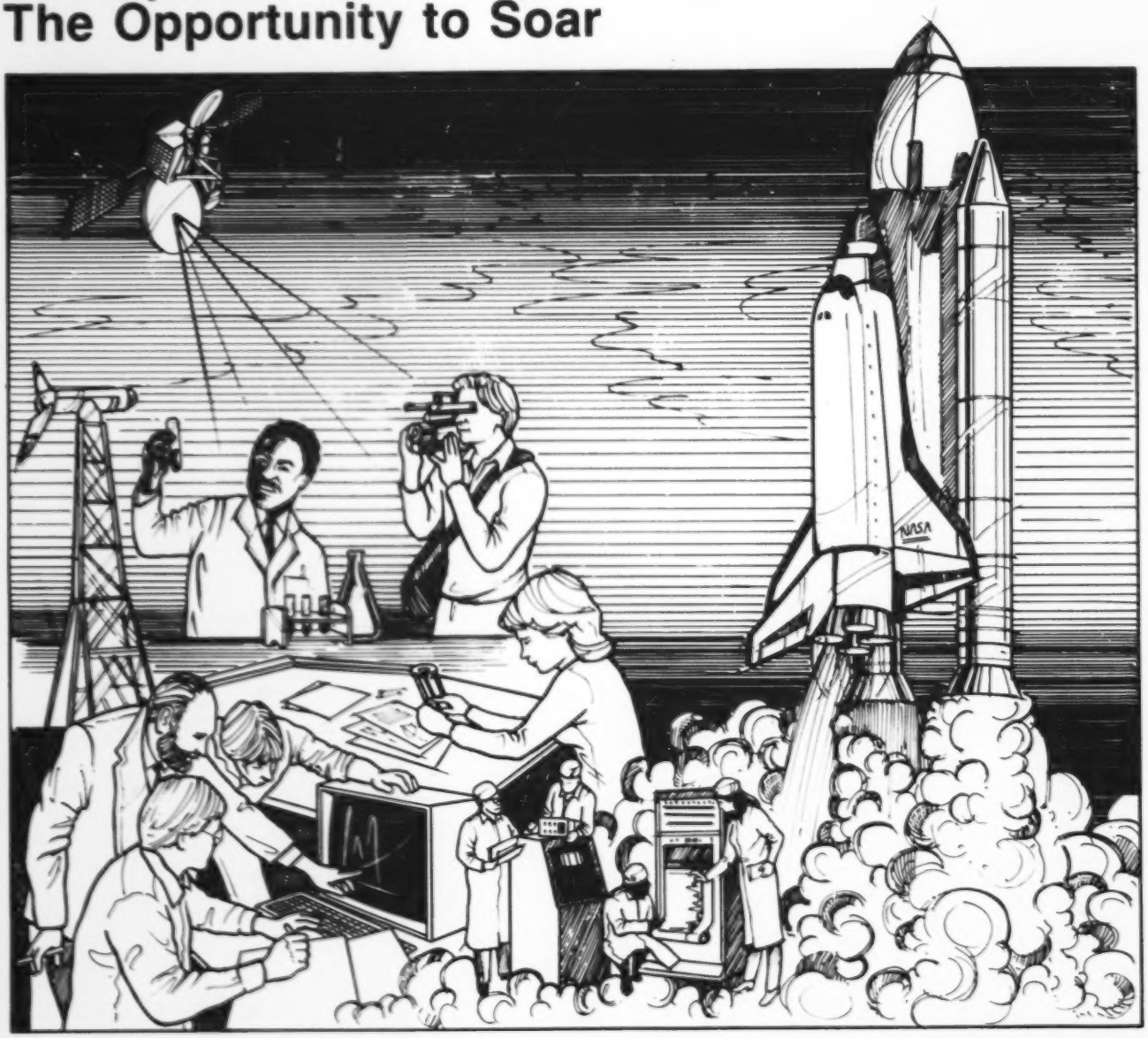
Aerospace Technology Careers: The Opportunity to Soar



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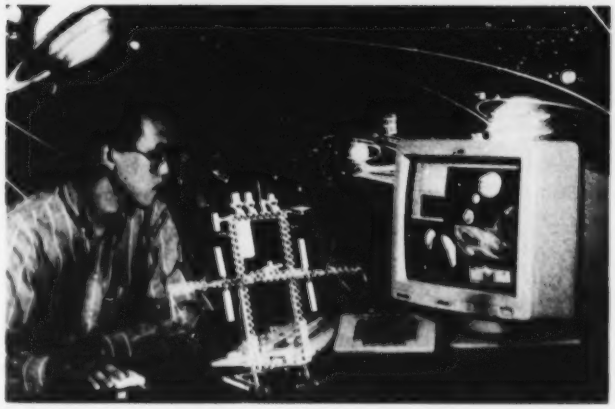
Careers in Space

The 21st century will be a time of great excitement in space exploration and aeronautical research. It will be a time of new discoveries, space stations, robotic probes, moon outposts and manned flights to Mars. There will be many goals not yet dreamed or imagined for the space program. Those goals will become real because people like you will dream them; people like you will work to make them happen.

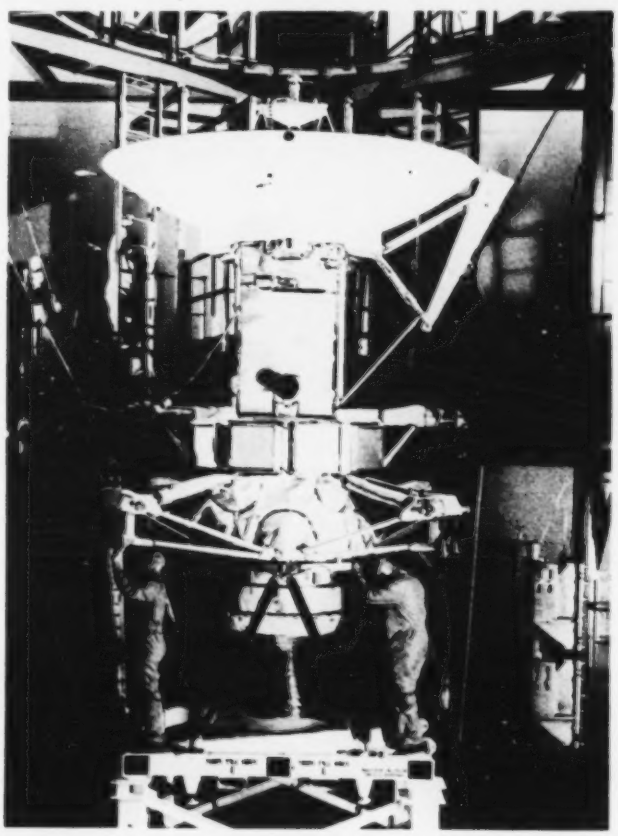
Careers in aerospace, whether with the National Aeronautics and Space Administration (NASA) or private industry, are professionally challenging and personally rewarding. If you choose to become part of the aerospace community, you will help the United States lead the way in space exploration.

One way to decide if you're interested in working in aerospace is to examine the talents you already have. Look at your classroom activities as well as your hobbies and interests. Even consider your daydreams. When you



An engineer uses a computer to better understand how planetary environments affect NASA missions.

NASA payload specialists prepare and perform medical experiments as part of a Shuttle mission devoted to the study of life sciences.



Technicians prepare the Magellan spacecraft, which was deployed in 1989 and began mapping the surface of Venus in 1990.

A NASA photographer shoots a laser test. Recording scientific experiments requires the skills of people trained in all media.

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gaze into the night sky, do you wonder about the stars and the planets? About living in space and the possibility of extraterrestrial life?

Have you ever wondered what makes an airplane fly? What goes into its design that makes it fly faster, quieter, and safer? What are rockets used for?

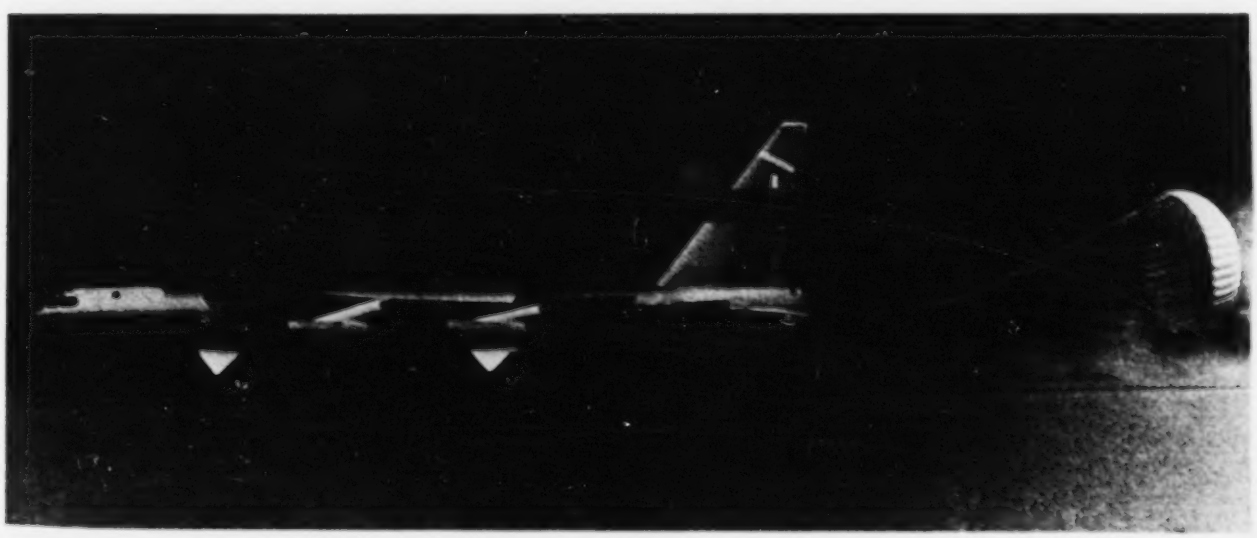
The following list can help you identify your potential for success in aerospace technology.

- Do you ask a lot of questions, wanting to know as much as you can about things and how they work?
- Do you like to solve problems and puzzles?
- Do you like to create and build things?
- Do you enjoy working with computers?
- Do you enjoy math and science?
- Do you get good grades?

A NASA control team reviews a mission plan prior to launch. The control facility is a command post, communications center and data relay station for scientists, mission managers and their support staffs.

If you answered yes to most of these questions, you may want to consider an aerospace career. And if that is the case, you need to learn all you can about aerospace technology.

NASA scientists prepare an experiment designed to help them better understand what impact outer space has on sensitive instrumentation.



During testing of an orbiter chute system, a test parachute unfurls behind NASA's B-52 research aircraft.

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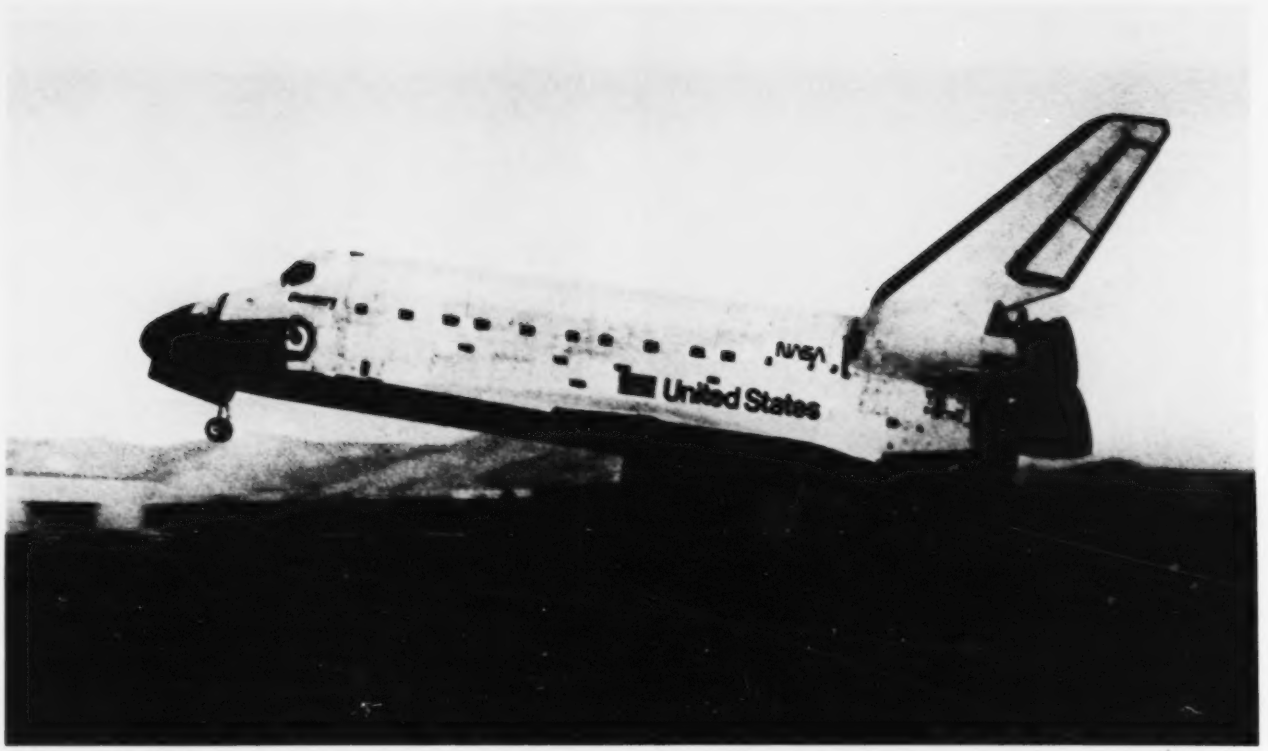
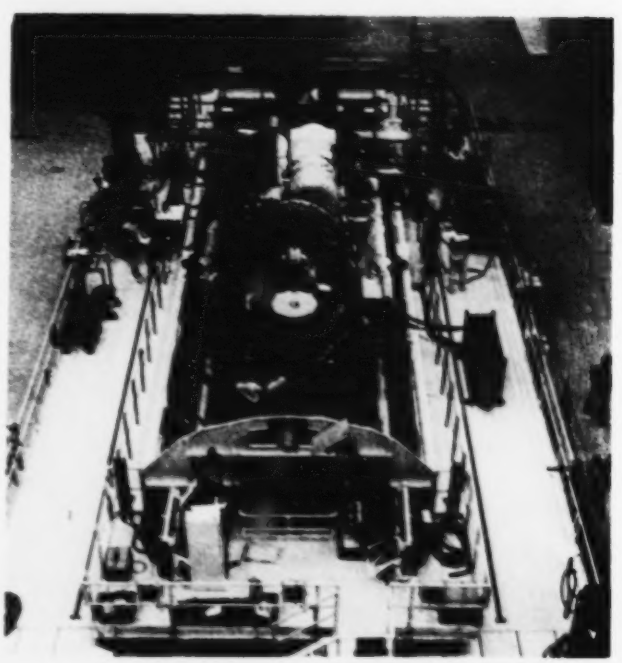


Each Shuttle mission returns bearing test results that will enhance future space missions as well as life on Earth.

Preparing for an Aerospace Career

Once you've decided that you're interested in an aerospace career, you need to find out what skills and experiences you will need. It is never too early to begin preparing yourself for your career. Public libraries are good sources of information. Read books about what has been done in aerospace. Read science fiction, especially stories about interplanetary travel, living and working in space, colonization of the moon and Mars. Much of what has already been accomplished in space is the result of scientists making happen what science fiction writers imagined. Read magazines that tell about the latest developments in airplanes and about the most recent discoveries in our solar system. NASA can provide you with helpful Information Summaries, Fact Sheets, and other material about research and development. For these publications, write to a NASA Center, Attn.: Public Mail Office. The addresses are listed in the back of this publication.

Reading and learning about space is a great start. Also, because aerospace technology requires a solid education, even in the non-technical areas, you must learn all you can in school. A grade point average of 3.0 or better (out of a 4.0) increases your chances of being hired by NASA or the private aerospace industry. Your studies should focus on science, mathematics, and English. Some recommended courses are algebra, geometry, trigonometry, math



NASA's Shuttle-borne observatory, Astro, underwent testing prior to launch. Astro explored the invisible ultraviolet and X-ray universe in greater depth and detail than ever before.

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analysis, calculus, computer math, biology, chemistry, physics, English composition and literature.

Also, NASA has student programs such as shadowing, stay-in-school, and the Student Science Involvement Program. To learn more about these, write to any NASA Center, Attn.: Student Programs Office. You should also write to private aerospace companies. They can provide information and special programs to interested students.

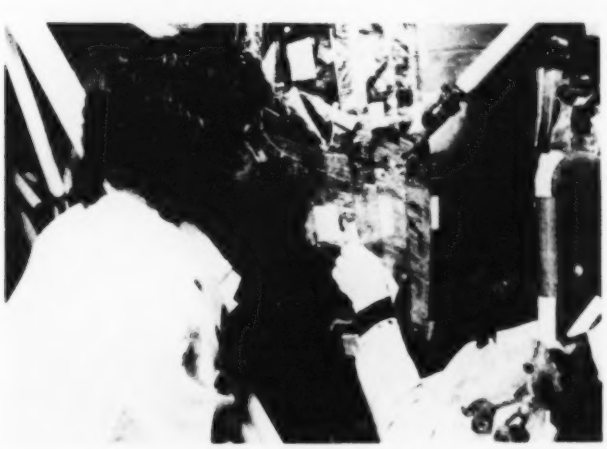
As you get older, you should plan to participate in a cooperative or intern program once you complete your education and begin your actual job search.

While good grades are important, participation in extracurricular activities and healthy life experiences are also important parts of your career plan. Get involved in after-school sports and clubs you enjoy.

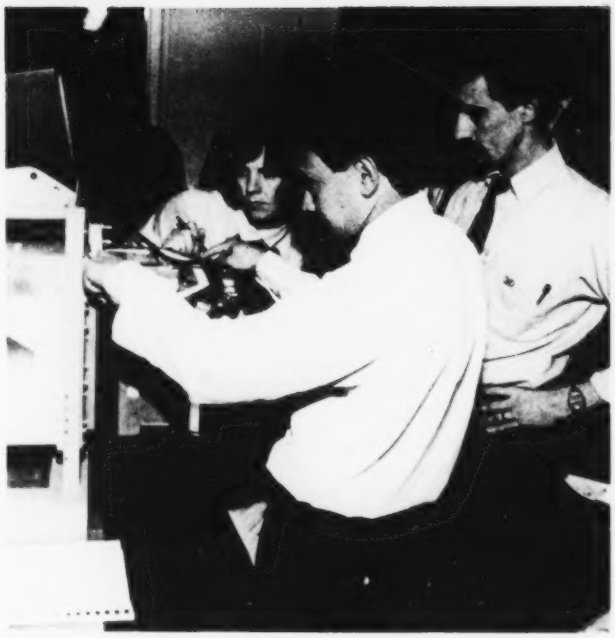
Careers in Aerospace

The nation needs people with a wide range of educational backgrounds to accomplish its goals in space exploration and aeronautics research in the 21st century. Among those who conduct the research, design and develop the vehicles and systems for future flight are scientists and engineers. Relatively few of these people become the astronauts who live and work in space. Most are part of an Earth-based workforce of astronomers, chemists, geologists, meteorologists, physicists, oceanographers, biologists, medical doctors, nutritionists, sociologists and mathematicians. In addition, professionals will be needed from every engineering specialty, such as civil, biomedical, aerospace, electrical, industrial, materials, mechanical, environments, petroleum, nuclear, safety, and systems.

Technicians play an important part of the aerospace team. They work closely with scientists and engineers to support research and development efforts. Technicians prepare drawings and specifications; set up and perform tests on materials, parts, and systems to measure performance and reliability; operate wind tunnels; work in laboratories; construct test equipment; build models; and assist with many types of research.



Researchers install multilayer insulation on a cryogenic tank. The experiment will help scientists understand extreme thermal conditions and their influence on cryogenic fluids like liquid hydrogen and liquid nitrogen.



Advances in electronics have allowed NASA scientists to improve life on Earth as well as improve the performance of equipment used in space.

Other careers in the aerospace industry, such as human resources, accounting, financial management, and procurement and contracts, are similar to those in other businesses. Using a variety of media, writers, editors, artists, and photographers keep the public informed about NASA's many programs and services. All aerospace jobs -- professional, technical, and non-technical — require good communication skills.

Employment Requirements

You will need a degree from an accredited college or university for most of the positions in aerospace technology. A Bachelor's degree with major study in an appropriate field — engineering (not engineering technology), physical science, life science, or mathematics — is required. The degree must include courses appropriate to the aerospace technology specialty that interests you. Check with the personnel office at a NASA Center to ensure that the courses you plan to take in college are appropriate for the career you want in aerospace technology.

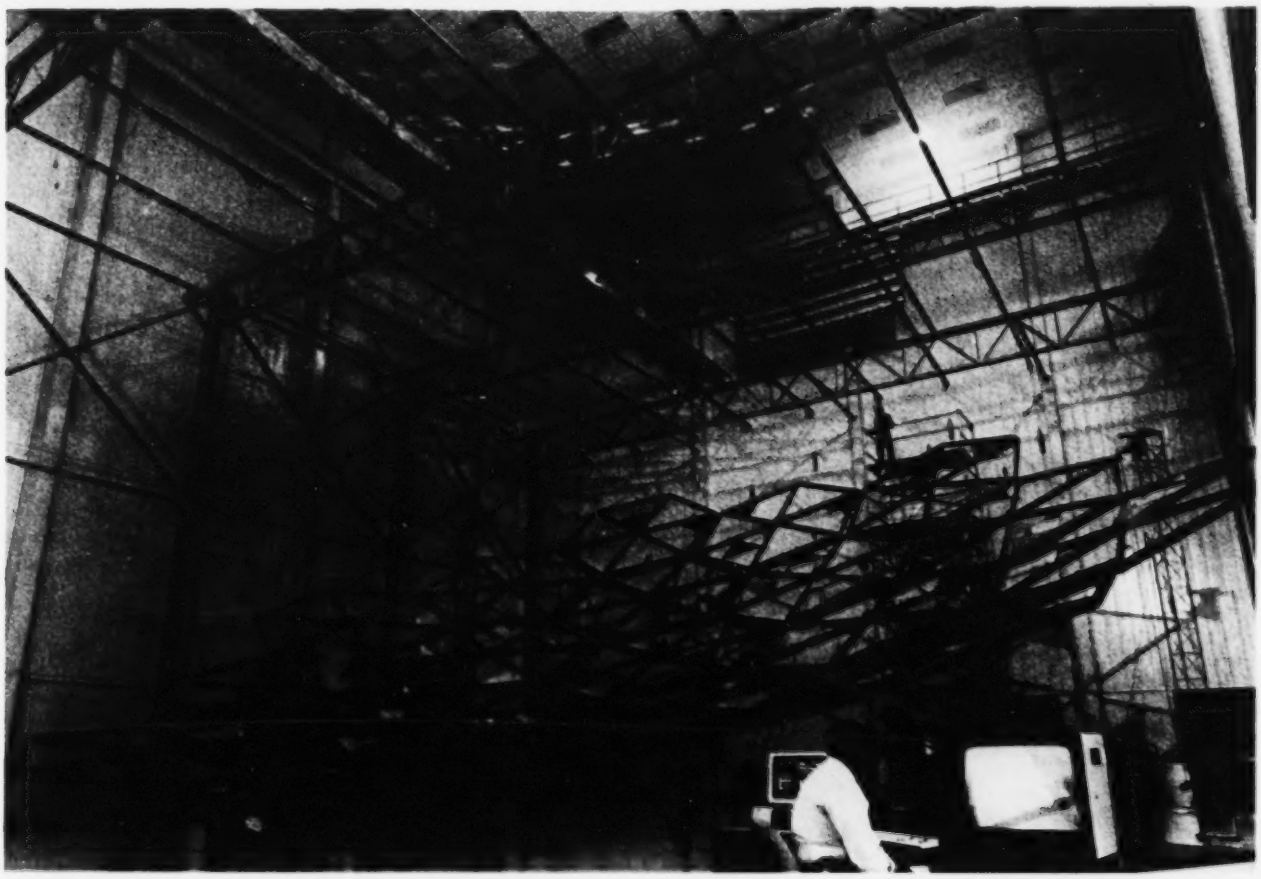
How to Apply

When you are ready to begin your career, NASA would like you to consider joining them. To apply for work at NASA, you must first submit an Application for Federal Employment (Standard Form 171).

Your eligibility and relative standing are based on the information in your application. You will improve your chances for consideration and eliminate delays if it is filled out completely and accurately.

If applying for a research position, indicate and describe each segment of relevant professional experience in detail. This should include the nature of the fields or specialties in which you worked; the nature and extent of individual and team duties and the proportion of time in each; any research or technical contributions you made personally; the level of difficulty and responsibility of the different positions you held; and the degree and nature of supervision given and received. You should give special attention to research, development, and consulting work including such functions as report writing, technical paper presentation, and special committee membership. If research work has been accompanied by teaching, you should show the percentage of time spent on each phase of work. Your description of professional experience need not be lengthy but should include all pertinent information.

Nutrition experts design the diets astronauts eat while on orbit. While the goal is good nutrition, experts also emphasize taste. Astronauts on future missions will enjoy meals with an international flavor.



NASA engineers use computer-aided design to build and test structural configurations that will enhance mission performance.

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If applying for an entry level position, you will need to provide a college transcript or list of college courses, grades and grade point average. Courses expected to be completed within nine months of your application date should be included.

If you have an advanced degree, a Master's or higher, when you apply to NASA, you will want to be considered for a GS-9 rating (government rating based on holding a Master's degree). If you apply for a GS-9, your application should include a description of your Master's thesis.

Also include three references from people familiar with your education and experience, especially in the areas related to the field for which you are applying.

The personnel office of any NASA installation has additional information and the forms you will need.

You can be a part of the NASA vision, no matter what your interests. NASA is eager to help prepare the next generation of scientists, astronauts, engineers and other professionals who will take us into the future. Write to any NASA installation for information about aerospace technology.

NASA's mission scientists plan and direct space experiments.

Best Opportunities for Employment with NASA

WORK LOCATIONS DESIRED	Space Sciences	Earth Sciences	Fluid & Flight Mechanics	Materials & Structures	Propulsion Systems	Flight Systems	Measurement & Instrumentation Systems	Data Systems	Facilities	Management	Life Sciences & Systems	Operations
Ames Research Center and Dryden Flight Research Facility	X	X	X	X		X	X	X	X	X	X	
Goddard Space Flight Center and Wallops Flight Facility	X	X	X	X	X	X	X	X	X	X		X
Johnson Space Center		X	X	X	X	X	X	X	X	X	X	X
Kennedy Space Center			X		X	X	X	X	X	X		X
Langley Research Center			X	X		X	X	X	X	X		
Lewis Research Center			X	X	X	X	X	X	X	X		
Marshall Space Flight Center	X		X	X	X	X	X	X	X	X		
Stennis Space Center		X			X			X	X			
NASA Headquarters										X		

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NASA Installations

Ames Research Center, Moffett Field, CA 94035
Dryden Flight Research Facility, Edwards, CA 93523
Goddard Space Flight Center, Greenbelt, MD 20771
Headquarters, NHP, Washington, DC 20546
Johnson Space Center, Houston, TX 77058
Kennedy Space Center, Kennedy Space Center, FL 32899
Langley Research Center, Hampton, VA 23665
Lewis Research Center, Cleveland, OH 44135
Stennis Space Center, Stennis, MS 39529
Wallops Flight Facility, Wallops Island, VA 23337

Research in icing tunnels lets scientists understand the influence of ice on aircraft performance.

At a NASA visitor center, a video crew shoots a segment that provides an overview of the history of aeronautical research and development.

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